

Notice of Allowability

Application No.

10/789,771

Examiner

Michael Le

Applicant(s)

IKEGAYA ET AL.

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2163

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the reply filed July 31, 2006.
2. ☒ The allowed claim(s) is/are 1-13 and 21-23.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

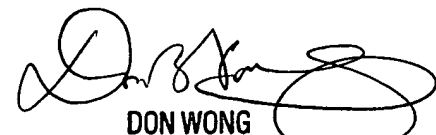
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


DON WONG
SUPERVISORY PATENT EXAMINER
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DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. George Yee on October 13, 2006. Claims 9-13 and 21-23 have been renumbered and, if applicable, their dependency changed in accordance with United States practices. In particular claim 9 is now claim 10, claim 10 is now claim 11, claim 11 is now claim 12, claim 12 is now claim 14, claim 13 is now claim 15, claim 21 is now claim 9, claim 22 is now claim 13 and claim 23 is now claim 16. New claim numbers are reflected in the Examiner amendments below.

The application has been amended as follows:

The claims have been amended as follows:

1. A computer system for detachable storage, comprising:
 - a computer;
 - a connected storage device connected to said computer;
 - means for registering identification information about an unnecessary file to identify one or more unnecessary files;
 - first means for determining whether a file stored on said connected storage device is one of said unnecessary files;

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second means for determining, ~~for a file that is not one of said unnecessary files,~~ whether said file is to be migrated to another storage device;

an unnecessary file table having information between each of a plurality of migration source storage devices and none or at least one file corresponding to one of the migration source storage devices and not to be migrated to any one of a plurality of migration destination storage devices, wherein the unnecessary file table registers therein, for each file, a file name of the file, a related directory name ~~relating to the file,~~ an update time ~~of the file,~~ and a storage device name of ~~a the migration source~~ storage device which stores ~~the said~~ each file, and registers files requiring no data migration, wherein an unnecessary file ~~is a file that~~ does not need to be migrated to ~~a any one of said~~ data migration destination storage devices;

means for allowing the user to setup, through an input device, conditions of unnecessary files to be registered in the unnecessary file table, and searching, under the setup conditions, the migration destination storage devices to identify ~~for~~ files that meet the conditions and register the identified files in the unnecessary file table, wherein the conditions of the unnecessary files set up by the user include setting a condition that a file be left unaccessed during a certain period of time, so that an unnecessary file table, wherein data migration is not performed for a given file ~~stored in the migration source storage device~~ if the given file is registered in the unnecessary file table, and data migration is performed for ~~a the given~~ file ~~stored in the migration source storage device~~ if the given file is not registered in the unnecessary file table; and

a said computer checking all ~~the files of one of the~~ in a first migration source storage device ~~[[s]]~~ to determine whether each of the files thereof ~~the one migration source storage device~~ is an unnecessary file ~~which is not to be migrated to a migration destination storage device or an~~

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already migrated file which has been migrated to ~~the at least one~~ of the migration destination storage devices, wherein after checking all the files, the computer starts data migration operation on only the files that are not unnecessary files;

wherein the computer detaches the ~~one first~~ migration source storage device from the computer system if all the files thereof ~~the one migration source storage device~~ are unnecessary files or have been migrated after said checking.

2. The computer system for detachable storage according to claim 1 wherein said connected storage device can be removed depending on results from said first and second means for determining.

3. The computer system for detachable storage according to claim 1, further comprising means for acquiring a history of file migration of files that have been migrated from said connected storage device to said another storage device, wherein said history of file migration is referenced to determine whether file migration ~~of a file to said another storage device~~ is to be performed.

4. The computer system for detachable storage according to claim 1, wherein whether or not ~~a said~~ file stored on said connected storage device is migrated to said another storage device is determined by determining whether said file is duplicated on said another storage device.

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6. The computer system for detachable storage according to claim 1, further comprising a second computer which is connected to said computer, to said connected storage device, and to said another storage device,

wherein said second computer comprises said means for registering, said first means for determining, and said second means for determining, and

means for displaying information to indicate that data migration is completed for said connected storage device.

7. The computer system for detachable storage according to claim 6, wherein said second computer further comprises means for notifying said computer of completion of migration of data stored on said connected storage device when each file stored on said connected storage device has been determined to be one of said unnecessary files or has been migrated to said another storage device.

8. The computer system for detachable storage according to claim 6, wherein said second computer collects information about a candidate file to be stored on said another storage device, checks whether ~~said~~ candidate file is not one of said unnecessary files, and determines whether said candidate file is migrated to said another storage device.

9. The computer system for detachable storage according to claim 1, further comprising:
a storage-device specific file table for storing storage device names of additional storage devices, file names of stored files for each additional storage device, directory name related to

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each file, the storage-device specific file table being used to check to determine whether the same file is stored in any of the migration destination storage devices; and

means for, if a file in the first migration source storage device is not registered in the unnecessary file table and if information on any of the migration destination storage devices is stored in the storage-device specific file table, for checking to determine whether the file stored in the first migration source storage device corresponds to the file name and directory name amongst the information on the migration destination storage devices and, if correspondence is determined, deciding that data migration is unnecessary.

10. A computer readable storage medium having a program for a computer system that is connected to a computer and a removable storage device or a storage device for storing data on a removable medium,

the program comprising:

code for registering identification information to identify none or at least one unnecessary file in an unnecessary file table having information between each of a plurality of migration source storage devices and none or at least one file corresponding to one of the migration source storage devices and not to be migrated to a migration destination storage device, wherein the unnecessary file table registers therein, for each file, a file name of the file, a related directory name ~~relating to the file~~, an update time ~~of the file~~, and a storage device name of a storage device which stores ~~the said each~~ file, and registers files requiring no data migration, wherein an unnecessary file ~~is a file that does not need to be migrated to a data migration destination storage device~~;

code for allowing the user to setup, through an input device, conditions of unnecessary files to be registered in the unnecessary file table, and searching, under the setup conditions, the migration destination storage device ~~for to identify~~ files that meet the conditions and register the identified files in the unnecessary file table, wherein the conditions of the unnecessary files set up by the user include setting a condition that a file be left unaccessed during a certain period of time, so that an unnecessary file is identified based on a file update point in time which is stored in the unnecessary file table; and

code for judging whether a given file stored on said removable storage device or on said removable ~~storage-medium~~ is an unnecessary file registered in the unnecessary file table, wherein data migration is not performed for a the given file ~~stored in the migration source storage device~~ if the given file is registered in the unnecessary file table, and data migration is performed for a the given file ~~stored in the migration source storage device~~ if the given file is not registered in the unnecessary file table;

code for checking all ~~the files of one of the~~ a first migration source storage device ~~[[s]]~~ to determine whether each of the files ~~thereof the one migration source storage device~~ is an unnecessary file ~~which is not to be migrated to a migration destination storage device~~ or is an already migrated file which has been migrated to the ~~at least one~~ migration destination storage device, and after checking all the files, starting data migration operation on only the files that are not unnecessary files;

code for, if the given file stored on said removable storage device or on said removable ~~storage-medium~~ is not an unnecessary file, then judging whether said given file is migrated to another storage device;

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code for, if ~~each~~ every file stored on said removable storage device or on said removable ~~storage-medium~~ has been judged to be one of said unnecessary files or has been migrated to said another storage device, displaying information to indicate that data migration is completed for said removable storage device or said removable ~~storage-medium~~; and

code for detaching said removable storage device or said removable ~~storage-medium~~ from the computer system if all ~~the files~~ thereof ~~the removable storage-medium~~ are unnecessary files or have been migrated.

11. The computer readable storage medium according to claim ~~[[9]]~~10, wherein said program includes an unnecessary-file database operation program, a migration completion judgment program and a removable device detection program.

12. The computer readable storage medium according to claim ~~10~~11, further comprising code for displaying unnecessary-file candidates and prompting a user to select an unnecessary file from said displayed unnecessary-file candidates.

13. The computer readable storage medium according to claim ~~[[9]]~~10, further comprising:
a storage-device specific file table for storing additional storage device names of storage devices, file names of stored files for each additional storage device, directory name related to each file, the storage-device specific file table being used to check to determine whether the same file is stored in any of the migration destination storage devices; and

code for, if a file stored in the first migration source storage device is not registered in the unnecessary file table and if information on the migration destination storage device is stored in the storage-device specific file table, for checking to determine whether the file stored in the first migration source storage device corresponds to the file name and directory name amongst the information on the migration destination storage device and, if correspondence is determined, deciding that data migration is unnecessary.

14. A device connected via a network to a first computer system that includes a removable storage device or a storage device for storing data on a removable storage medium and a second computer connected to said removable storage device or said storage device for storing data on a removable storage medium, the device comprising:

- a processor;
- a controller;
- a memory;
- a communication device connected to said network; and
- a display unit;

wherein said processor registers identification information with said memory to identify none or at least one registered unnecessary file in an unnecessary file table having information between each of a plurality of migration source storage devices and none or at least one file corresponding to one of the migration source storage devices and not to be migrated to a migration destination storage device, wherein the unnecessary file table registers therein, for

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each file, ~~a file name of the file~~, a related directory name ~~relating to the file~~, an update time of ~~the file~~, and a storage device name of a storage device which stores ~~the said each file~~, and registers files requiring no data migration, wherein an unnecessary file is a file that does not need to be migrated to ~~a data said~~ migration destination storage device;

wherein said processor allows the user to setup, through an input device, conditions of unnecessary files to be registered in the unnecessary file table, and searches, under the setup conditions, the migration destination storage device ~~for to identify~~ files that meet the conditions and register the identified files in the unnecessary file table, wherein the conditions of the unnecessary files set up by the user include setting a condition that a file be left unaccessed during a certain period of time, so that an unnecessary file is identified based on a file update point in time which is stored in the unnecessary file table;

wherein data migration is not performed for a given file stored in the migration source storage device if the given file is registered in the unnecessary file table, and data migration is performed for ~~a the given file stored in the migration source storage device~~ if the given file is not registered in the unnecessary file table;

wherein said processor checks all ~~the files of one of the~~ a first migration source storage device ~~[[s]]~~ to determine whether each of the files ~~thereof the one migration source storage device~~ is an unnecessary file which is not to be migrated to a migration destination storage device or an already migrated file which has been migrated to the ~~at least one~~ migration destination storage device, wherein after checking all the files, said processor starts data migration operation on only the files that are not unnecessary files;

wherein said processor judges whether a first file stored on said removable storage device or on said removable storage medium is a registered unnecessary file, and if said first file is not a registered unnecessary file, then judging whether said first file is migrated to another storage device;

wherein said processor detaches said removable storage device or said removable storage medium from the computer if all ~~the~~ files ~~of~~ stored on said removable storage device or on said removable storage medium are registered unnecessary files or have been migrated; and

wherein, if each file stored on said removable storage device or on said removable storage medium has been determined to be one of said registered unnecessary files or has been migrated to said another storage device, then said controller outputs information to said display unit to indicate that data migration is completed for said removable storage device or said removable storage medium.

15. The device according to claim ~~12~~ 14, wherein said removable storage device or a storage device for storing data on said removable storage medium stores unnecessary-file information and a migration history as migration file information for providing data migration support; and

wherein said controller loads said unnecessary-file information and said migration history into said memory via said communication device.

16. The device according to claim ~~12~~ 14, further comprising:

a storage-device specific file table for storing storage device names of additional storage devices, file names of stored files for each additional storage device, directory name related to

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each file, the storage-device specific file table being used to check to determine whether the same file is also stored in the migration destination storage device;

wherein said processor, if a file stored in the first migration source storage device is not registered in the unnecessary file table and if information on the migration destination storage device is stored in the storage-device specific file table, checks to determine whether the file stored in the first migration source storage device corresponds to the file name and directory name amongst the information on the migration destination storage device and, if correspondence is determined, decides that data migration is unnecessary.

Allowance

2. Claims 1-13 and 21-23 (as originally numbered) are allowed.
3. The following is an examiner's statement of reasons for allowance:
4. The present invention is directed toward the field of data migration. The present invention utilizes an unnecessary file table to register files that are not to be migrated according to conditions set by a user. The data migration system performs the checking according to the conditions set by the user and registers the files accordingly. The system supports multiple source storage devices and multiple destination storage devices. The system also ensures safe removal of detachable storage devices.
5. The patentability of the claims is described in the Remarks filed by Applicant on July 31, 2006. In the Remarks, Applicant describes the specificity of the claimed unnecessary file table and also the claimed feature of user set conditions. The Examiner believes the Remarks filed by Applicant give valid reasons for allowance of the claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Le whose telephone number is 571-272-7970. The examiner can normally be reached on Mon-Thurs : 9:30am-6pm, Fri: 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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October 14, 2006